

What is claimed is:

1. A method of expansion of bone tissue for receiving a dental implant comprising the steps of:

5 (a) creating a small initial osseotomy site in the maxilla or the mandible to a desired depth using a pilot drill at a predetermined implant location;

(b) screwing a first threaded expander into said osseotomy site, thereby expanding said osseotomy site laterally by pushing bone tissue away
10 radially from a longitudinal axis of said osseotomy site;

(c) allowing said first expander staying in said osseotomy site for a sufficient amount of time to impress an interior wall of said osseotomy site;

(d) retrieving said first expander by screwing said first expander out in a reverse direction; and

15 (e) repeating steps (b) to (d) using a second threaded expander which has an increasing outer diameter and a substantially same threaded structure to said dental implant, starting by following a thread pattern created in steps (b) to (d), to further expand said osseotomy site laterally to a final diameter which is complementary, but narrower than an outer diameter of said
20 dental implant so that expanded osseotomy site enables said implant to sufficiently bite into and uniformly engage with surrounding bone tissue.

2. The method of Claim 1 further comprising screwing said dental

implant into said expanded osseotomy site after step (e), starting by following said thread pattern created by said expanders.

3. The method of Claim 1, wherein in step (c) said sufficient amount
5 of time is from about 10 seconds to about 2 minutes.

4. The method of Claim 3, wherein in step (e) said final diameter is from about 0.2 to about 0.5 mm narrower than said outer diameter of said dental implant.

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5. The method of Claim 4 further comprising an additional step of repeating step (e) using a third threaded expander having an increasing outer diameter from said second expander to further expand said osseotomy site.

15 6. The method of Claim 5, wherein a threaded portion of said first, second and third expanders has a same length.

7. The method of Claim 6, wherein each of said expanders has a substantially same threaded structure to said dental implant for preparing a
20 complementary geometry of said osseotomy site for receiving said dental implant.

8. The method of Claim 4, wherein said small initial osseotomy site

has a diameter in a range from about 1.5 mm to about 2.5 mm obtained using said pilot drill having a matching diameter.

9. The method of Claim 8, wherein a first expansion achieved by
5 said first expander expands said osseotomy site from about 0.2 to about 0.5 mm in diameter.

10. The method of Claim 9, wherein a second expansion, achieved by
using said second expander expands said osseotomy site from about 0.6 mm to
10 about 1.2 mm in diameter.

11. The method of Claim 1, wherein said screwing said expanders
into said osseotomy site is performed using a ratchet.

15 12. A method of expansion of bone tissue for receiving a dental
implant comprising the steps of:

(a) creating a small initial osseotomy site in the maxilla or the
mandible to a desired depth using a pilot drill at a predetermined implant
location;

20 (b) drilling to extend said osseotomy site only at a cortical level to a
diameter complementary to said dental implant,

(c) screwing a first threaded expander into said osseotomy site,
thereby expanding said osseotomy site laterally by pushing bone tissue away

radially from a longitudinal axis of said osseotomy site;

(d) allowing said first expander staying in said osseotomy site for a sufficient amount of time to impress an interior wall of said osseotomy site;

(e) retrieving said first expander by screwing out in a reverse
5 direction; and

(f) repeating steps (c) to (e) using a second threaded expander which has an increasing outer diameter and a substantially same threaded structure to said dental implant, starting by following a thread pattern created in steps (b) to (d), to further expand said osseotomy site laterally to a final
10 diameter which is complementary, but narrower than an outer diameter of said dental implant so that expanded osseotomy site enables said implant to sufficiently bite into and uniformly engage with surrounding bone issues.

13. The method of Claim 12 further comprising screwing said dental
15 implant into said expanded osseotomy site after step (f), starting by following said thread pattern created by said expanders.

14. The method of Claim 12, wherein in step (d) said sufficient amount of time is from about 10 seconds to about 2 minutes.

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15. The method of Claim 14, wherein in step (f) said final diameter is from about 0.2 to about 0.5 mm narrower than said outer diameter of said dental implant.

16. The method of Claim 15 further comprising an additional step of repeating step (f) using a third threaded expander having an increasing outer diameter from said second expander to further expand said osseotomy site laterally.

17. The method of Claim 16, wherein a threaded portion of said first, second and third expanders has a same length.

18. The method of Claim 17, wherein said second or third expander, used as a last expander prior to placement of said dental implant, has a substantially same threaded structure to said dental implant for preparing a complementary geometry of said osseotomy site for receiving said dental implant.

19. The method of Claim 18, wherein each of said expanders has a substantially same threaded structure to said dental implant for preparing a complementary geometry of said osseotomy site for receiving said dental implant.

20. The method of Claim 20, wherein each expansion achieved by one of said expander expands said osseotomy site from about 0.6 mm to about 1.5 mm in diameter.

21. A kit of bone expanders for expanding bone for receiving a dental implant, comprising a plurality of threaded expanders of substantially same structure with increasing diameters, wherein each of said expanders
5 comprising:

- (a) a top enabling engagement with a dental ratchet,
- (b) a cylindrical shaft having a upper and a lower end, having depth markings along a longitudinal axis of said shaft,
- (c) a transition between said upper end of said cylindrical shaft and
10 said top, and
- (d) a threaded expansion tip connected to said lower end of said cylindrical shaft, said tip having a substantially same structure of said dental implant, but a narrower outer diameter than an outer diameter of said dental implant.

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22. The kit of bone expanders of Claim 21, wherein said threaded expansion tip of each expander within said kit has the same length.

23. The kit of bone expanders of Claim 22, wherein said threaded
20 expansion tip is tapered.

24. The kit of bone expanders of Claim 22, wherein said threaded expansion tip is straight.